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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/804,303	03/19/2004	Hideaki Tsuda	3408.70081	7833
7590 07/18/2006			EXAMINER	
Patrick G. Burns, Esq. GREER, BURNS & CRAIN, LTD. Suite 2500 300 South Wacker Dr. Chicago, IL 60606			HON, SOW FUN	
			ART UNIT	PAPER NUMBER
			1772	
DATE MAILED: 07/18/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/804,303

Applicant(s)

TSUDA ET AL.

Examiner

Sow-Fun Hon

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 May 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-29 and 34-43 is/are rejected.
- 7) ☒ Claim(s) 30-33, 44 and 45 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Response to Amendment***

***Withdrawn Rejections***

1. The 35 U.S.C. 112, 2<sup>nd</sup> paragraph rejection of claims 1-45 is withdrawn due to Applicant's amendment and clarification in the remarks section dated 05/05/06.

***Rejections Repeated***

2. The 35 U.S.C. 103(a) rejections of claims 1-29, 34-43 over the primary combination of Wakita in view of Takiguchi, are repeated for the same reasons previously of record in the Office action dated 02/09/06.

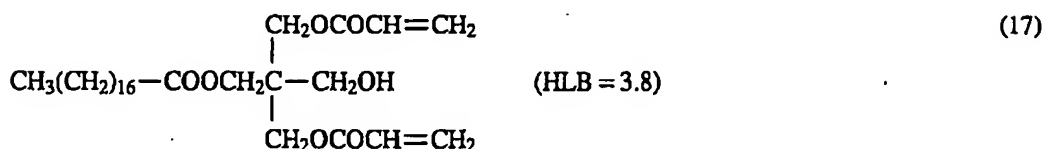
***Response to Arguments***

3. Applicant's arguments against the primary combination of Wakita in view of Takiguchi, have been fully considered but they are not persuasive.
4. Applicant argues that the compounds disclosed in Takiguchi are not crosslinkable because they have only one double bond per molecule since at least two double bonds per molecule are necessary for forming cross-links.

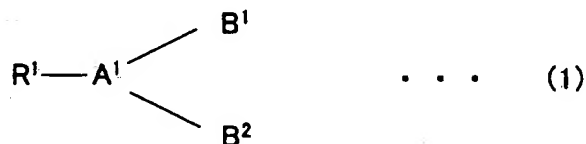
Applicant is respectfully apprised that while the Office interprets the term "cross-linkable" in the broader sense wherein the double bond of the monomer is crosslinkable when combined with a multifunctional cross-linking agent, Takiguchi does teach that the resin is cross-linked (column 3, lines 44-54), and

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that the resin composition comprises at least one compound with two double bonds per molecule, as represented by formula (17) shown below:



which corresponds to generic formula (1) of Applicant shown below:



where  $\text{CH}_3(\text{CH}_2)_{16} = \text{R}^1$ , the hydrophobic, long-chain terminal part; -  
 $(\text{COOCH}_2)((\text{CH}_2)\text{OH})\text{C} = \text{A}^1$ , the trivalent group as defined by Applicant,  
 comprising an aliphatic chain that may be branched, and  $\text{CH}_2\text{OCOCH}=\text{CH}_2 = \text{B}^1$   
 $= \text{B}^2$ , the cross-linkable structural parts.

5. Applicant argues that the mere presence of the compounds in Takiguchi does not prove the presence of the claimed “adhered cross-linked structure” and “rising part”.

Applicant is respectfully apprised that the fact that Takiguchi does teach that the resin is cross-linked (column 3, lines 44-54), and the hydrophobic terminal part with a straight-chain section having eight carbons ( $-(\text{CH}_2)_7\text{CH}_3$ , column 6, line 42), which is within the claimed range of three or more carbon atoms, is evidence that the claimed “adhered cross-linked structure” and “rising part” are present, as defined by Applicant’s disclosure.

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6. Applicant argues that the alignment of the liquid crystal molecules is controlled by being encaged in the sea of a polymer, which is totally different from the way shown in Applicant's Fig. 4(B) and its related explanation; that clear evidence of this is the difference of the concentrations of liquid crystals (70 wt% at column 14, lines 13-14 in Takiguchi, and 98 wt.% at page 39, line 9 in the present specification); and that since the polymer is present in the vicinity of the liquid crystal contacting surface, the concentration is much less than in the phase separation system.

Applicant is respectfully apprised that Applicant has not clearly distinguished the differences between the liquid crystal layer of Applicant and that of Takiguchi in the present claims. The liquid crystal contacting surface is any interface between the liquid crystal and the crosslinked resin. It is noted that the features upon which applicant relies (i.e., 98 wt. % liquid crystal) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993), and that Takiguchi teaches that it is preferable that the amount of liquid crystal can be 90 wt. % (column 11, lines 65-67), which is close to 98 wt. %. Applicant teaches that the monomers, which form the cross-linked structural part and the rising terminal part, are mixed in with the liquid crystal (Applicant's disclosure, acrylate resin composition, page 39, lines 7-15), just like the liquid crystal/monomer mixture of Takiguchi (liquid crystal/prepolymer composition, column 10, lines 48-58). Applicant has not shown comparative data which makes it clear that the

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invention of Takiguchi does not have the crosslinked resin polymer present in a thin film at the surface of the substrate, when the amount of liquid crystal is at 90 wt. % (not the liquid crystal surface, which is the interface between the liquid crystal and the resin) using the same method of demonstration in Applicant's disclosure (page 40, lines 13-23). Applicant is also respectfully requested to bear in mind that the thin film at the surface of the substrate is present in Applicant's specification, but not in the present claims.

7. Applicant's arguments against the other references are directed against the valid use of Takiguchi, and have been addressed above.

### ***Conclusion***

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Any inquiry concerning this communication should be directed to Sow-Fun Hon whose telephone number is (571)272-1492. The examiner can normally be reached Monday to Friday from 10:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached at (571)272-1498. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*S. Hon*

Sow-Fun Hon

*07/05/06*

*Harold Pyon*

HAROLD PYON  
SUPERVISORY PATENT EXAMINER

*1772*

*1/2/06*